

USSR

SYURIN, V. N., et al., *Laboratornaya diagnostika virusnykh bolezney zhivotnykh*, 1972, 416 pp w/ill.

The book also contains both common, widespread diseases of farm animals as well as little-studied, so-called "exotic" diseases characteristic of animals on the African continent, the introduction of which to our country is not excluded as a result of the ever-developing trade and transport relations.

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SYURIN, V. N., et al., Laboratornaya diagnostika virusnykh bolezney zhivotnykh, 1972, 416 pp w/ ill.

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UDC 576.858.25.097.2.077.3

6

GAYDAMOVICH, S. Ya., OBUKHOVA, V. R., MEL'NIKOVA, Ye. E., VOLOKHOVA, N. A., KIRYUSHCHENKO, T. V., KLISENKO, G. A., KRASHOBAYEVA, L. N., LAVROVA, N. A., SHARIPOVA, Sh. A., and SHANOYAN, N. K., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Use of Ultrasound to Increase Arbovirus Antigen Activity in Serological Tests in Vitro"

Moscow, Voprosy Virusologii, No 3, May/Jun 1973, pp 356-360

Abstract: An ultrasonic technique to increase antigen activity was tested on five groups of arbovirus antigens. Antigens prepared from suckling mouse brain by the sucrose-acetone and freon methods, or in chick fibroblasts without preliminary processing, were subjected to 30-40 sec of 20,000-25,000 Hz ultrasonic treatment. Titers determined before and after treatment by hemagglutination inhibition (HAI), complement fixation (CF), and agar gel diffuse precipitation (AGDP) were compared. For group A and B arboviruses CF and HAI titers increase 4-8 times after treatment, while AGDP titers remained unchanged. In the Kemerovo-Bunyavirus-California group, the CF titers increased by 2-4 times, and no change was observed in HAI titers. CF titers increased 2-8 times for all but Neapolitan arbovirus of the Phlebotomus group.

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GAYDAMOVICH, S. Ya., et al., Voprosy Virusologii, No 3, May/Jun 1973, pp 356-360

The only HAI response in this group was by Bujaru arbovirus, and only after treatment the AGDP titers increased in a few cases. Ultrasonic treatment had an especially favorable effect on CF and AGDP titers in the Uukuniemi group, while changes in HAI titers were less pronounced. Thus ultrasonic treatment normally facilitates antigen activity in CF and HAI reactions and has a variable effect on the AGDP reaction. Treated antigens did not lose specificity. It is concluded that ultrasonic treatment can be used not only to increase titers but also to reveal titers of relatively inactive antigens.

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USSR

UDC 576.895.42-078.2:543.545

KRASNOBAYEVA, Z. N., STEPANCHENOK-RUDNIK, G. I., and GIBOKHOVSKAYA, I. M.,
Vector Laboratory, Institute of Epidemiology and Microbiology imeni, N. F.
Gamaleya, Academy of Medical Sciences USSR

"Electrophoretic Study of Organ Homogenates and Hemolymph of Blood-Sucking
Ticks"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 6, 1971,
pp 704-708

Abstract: Homogenates of whole argasid and ixodid ticks belonging to 8
genera and 12 species and the hemolymph of a single argasid tick species
(*Alveonatus lahorensis*) in the imago and nymph III phases were compared by
agar electrophoresis to determine the nature of the protein spectra. The
electrophoretic mobility of the protein fractions was found to differ
between adult ticks of the two families and between several genera of ixodid
ticks (*Hyalomma*, *Dermacentor*, *Rhipicephalus*). Generic and even specific
differences were evident among the argasid ticks in the nymphal stage.
Ornithodoros papillipes nymph III contained 2 protein fractions, *O. porcinus*
domesticus 3, and *A. lahorensis* 5. The electrophoretic pattern was the
same within a single species. One protein fraction was invariably found in
the larval stage in the homogenates. The hemolymph of *A. lahorensis* exhibited
differences between the imago and nymph III. There may be sex differences in
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USSR

KRASNOBAYEVA, Z. N., et al., Meditsinskaya Parazitologiya i Parazitarnyye
Beozni, No 6, 1971, pp 704-708

protein fractions in *A. lahorensis* and other ticks,

2/2

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1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--THE TREATMENT OF DIFFERENT COMBINATIONS OF INTESTINAL
DYSBACTERIOSIS -U-
AUTHOR--KRASNOGLOVETS, V.N.
COUNTRY OF INFO--USSR
SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 5, PP 54-59
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ANTIBIOTIC, INTESTINAL DISEASE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3009/0073 STEP NO--UR/0497/70/048/005/0054/0059
CIRC ACCESSION NO--AP0138939

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138939

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TREATMENT OF DISEASES
COMPLICATED BY INTESTINAL DYSBACTERIOSIS SHOULD BE COMPLEX, ORIENTED NOT
ONLY AT THE PRINCIPAL AFFECTION, BUT ALSO AT INCREASE OF THE ORGANISM'S
REACTIVITY. IN MILD MANIFESTATION OF INTESTINAL DYSBACTERIOSIS
SHOULD NOT USE ANTIBIOTICS AND PRESCRIBE DESENSITIZATION THERAPY AND
VITAMINS. IN MODERATE DYSBACTERIOSIS IT IS EXPEDIENT TO INSTITUTE
ADDITIONAL TREATMENT WITH CHEMOTHERAPEUTIC AGENTS AND ANTIBIOTICS, IN
SOME CASES, UNDER CONTROL OF ANTIBIOGRAM. FOR THE NORMALIZATION OF THE
INTESTINAL MICROFLORA, ALONG WITH OTHER CURATIVE PREPARATIONS,
COLIBACTERIN COULD BE GIVEN. FACILITY: KAFEDRA INFEKTSIONNYKH
BOLEZNEY II MOSKOV GO MEDITSINSKOGO INSTITUTA IM. N. I. PIROGOVA.

UNCLASSIFIED

USSR

UDC: 621.583.8 : 621.039.66

BARYSHEV, B. A., GYAVGYANEN, L. V., DIAMANT, L. M., ISKOL'DSKIY,
A. M., KRASNOGOLOVYY, I. I., and NESTERUKHIN, Yu. Ye.

"Nanosecond Electronic-Optical Photorecorder 'Channel' With
Amplified Image Brightness"

Novosibirsk, Avtometriya, No 6, 1971, pp 53-58

Abstract: This paper represents a continuation of the work being done by the Institute of Automation and Electrometry on the design of devices for parallel recording and processing of optical signals obtained in the investigation of nanosecond and subnanosecond processes. A description is given in this paper of a multistage electronic-optical converter, developed by the authors, which has an electrostatic input chamber and two stages of image brightness magnification. A photograph and a functional diagram of the converter are given. Some of the advantages of this "Kamal" (Channel) instrument are low exposure time in frame operation, high electric field intensity near the photocathode due to the presence there of a control grid, a larger screen, high noise immunity, and a type of structure permitting assembly-line production by the Ministry of the Electronics Industry. The authors thank Yu. A. Shapiro for making the numerical computations, V. Yu. Sholekhov, Yu. N.

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SR

UDC: 621.383.8 : 621.039.66

MARYSHEV, B. A., et al, Avtometriya, No 6, 1971, pp 53-58

Yevgrafov, and V. A. Gubachenko for their help in the structural development of the instrument, and V. D. Prilepskikh for helping prepare the apparatus.

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USSR

UDC 517.917

KRASNOGOROV, V. A.

"Application of the Method of Orthogonal Trajectories to the First Problem of Discrimination in a Plane"

Tr. Samarkand. un-ta (Works of Samarkand University), 1979, No. 181, pp 50-60 (from RZh-Matematika, No 4, Apr 71, Abstract 4B201)

Translation: The problem of the uniqueness of the O-curve in a normal Frommer region of the second type determined by the inequalities $0 < x < \delta$, $|y| < \epsilon$, where $\epsilon > 0$ and $\delta > 0$ are constants, is studied for the first-order real equation $y' = f(x, y)$ with the isolated singular point $O(0, 0)$. The following were obtained: 1) a necessary condition for nonuniqueness (in terms of the properties of the family of orthogonal trajectories); 2) a sufficient condition for uniqueness (geometric-analytic, applied directly on $f(x, y)$). The sign of uniqueness is illustrated by two examples in which the uniqueness is obvious: $\partial f / \partial y < 0$ for $x > 0$. A. Andreyev.

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USSR

UDC 547:754:04:541:138:2.547.759.3:543.253

PALANT, I. N., VAYNSHTEYN, Yu. I., KRASNOKUTSKAYA, D. M., and YAKHONTOV, L. N., All-Union Scientific Research Institute of Chemical Reagents and Chemicals of High Purity, Moscow, and All-Union Scientific Research Chemical-Pharmaceutical Institute imeni S. Ordzhonikidze, Moscow

"Derivatives of Azaindoles. XLII. Polarographic Oxidation and Dehydrogenation of 5-Azaindoles and 5,7-Diazaindoles"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 73, pp 773-776

Abstract: Polarographic oxidation of 5-azaindoles, 7-azaindoles, and 5,7-diazaindoles (22 compounds listed in a table) was carried out on a rotating Pt anode, using the method described by T. K. Adler and A. Albert, J. Chem. Soc., 1794, 1960. The relative facility of oxidation corresponded to that of dehydrogenation by the action of quinones. $E_{1/2}$ increased on transition from 7-azaindoles to 5-azaindoles and further to 5,7-diazaindoles. The effect of substituents could be well described by cross-correlation equations (cf. Vaynshteyn et al, Khim. Geterotsikl. Soyed., 1106, 1969). Deviations from the correlation were associated with the lactam-lactim tautomeric equilibrium of 6-hydroxy 5- and 7-azaindoles.

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USSR

UDC 547.759.3

YAKHONTOV, L. N., KRASIKOVITSKAYA, D. M., AKALAYEV, A. N., PALANT, I. N. and
VAINSHTEIN, YU. I., All Union Scientific Chemical-Pharmaceutical Research
Institute Ireni S. Ordzhonikidze, Moscow

"Azaindole Derivatives. XXXIX. Reactions of 6-Chloro-7-Azaindolines with
Amines"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 71, pp 769-794

Abstract: During the reactions of various primary and secondary amines with 6-chloro-7-azaindolines the normal nucleophilic substitution is accompanied by oxidation-reduction processes yielding concurrently dehalogenated products of 7-azaindolines and oxidation compounds -- 6-amino-7-azaindole derivatives. The ratio of the nucleophilic substitution products to the compounds obtained from the oxidation-reduction reaction depends principally on the nucleophilicity of the attacking amine. By selecting properly the amine component the reaction may be directed toward nucleophilic substitution, or toward the oxidation-reduction route. For example, when 1-phenyl-4-methyl-6-chloro-7-azaindoline reacts with basic amines such as pyrrolidine, piperidine, the normal products -- the derivatives of 6-amino-7-azaindoline -- are formed in 90% yield. When morpholine is used instead, the normal product drops to a 64% yield, and with

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YAKHONTOV, L. N., et al., Khimiya Geterotsiklicheskikh Soedineniy, No 6,
Jun 71, pp 789-794

N-methylpiperazine it drops to 56%. In the meantime the dehalogenated products
go from 1% to 7-8% to 28% respectively.

2/2

1/2 011 UNCLASSIFIED PROCESSING DATE--27/09/70
TITLE--REDOX PROCESSES DURING NUCLEOPHILIC SUBSTITUTIONS IN A SERIES OF
6,CHLORO,7,AZATINDOLINES -U-
AUTHOR-(03)-YAKHONTOV, L.N., KRASNOKUTSKAYA, D.M., AKALAYEV, A.N.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 192(1), 118-20
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--REDOX REACTION, CHLORINATED ORGANIC COMPOUND, INDOLE
DERIVATIVE, HETEROCYCLIC NITROGEN COMPOUND, AMINE, MORPHOLINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/1856 STEP NO--UR/0020/10/192/001/0118/0120
CIRC ACCESSION NO--AT0132121
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0132121

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.

1,PHENYL,4,METHYL,6,CHLORO,7,AZAINDOLE (I) REACTS WITH CYCLIC SECONDARY AMINES TO FORM THE NORMAL NUCLEOPHILIC SUBSTITUTION PRODUCTS AS WELL AS, IN CASE OF INSUFFICIENTLY NUCLEOPHILIC AMINES, PRODUCTS OF REDN. AND OXIDN. REACTIONS WERE RUN IN AN AUTOCLAVE AT 250DEGREES, 10 HR WITH 2 MOLES AMINE PER MOLE I. THUS, N,METHYLPYPERAZINE GAVE 27PERCENT 1,PHENYL,4,METHYL,7,AZAINDOLE (II) AND 47PERCENT 1,PHENYL,4,METHYL,6,(4,METHYLPYPERAZINO),7,AZAINDOLE (III), M. 132-30DEGREES. MORPHOLINE GAVE 57PERCENT 6,MORPHOLINO ANALOG OF III, M. 159-60DEGREES, ALONG WITH 8-12PERCENT II. PYRROLIDINE GAVE 91-2PERCENT 6,PYRROLIDINO ANALOG OF III, M. 164-50DEGREES, WHILE REACTION WITH PIPERIDINE GAVE 72-90PERCENT 6,PIPERIDINO ANALOG OF III, M. 119-20DEGREES. THE REACTIONS GAVE 0.8-8PERCENT IV (R SHOWN): 4,METHYLPYPERAZINO, M. 212-15DEGREES; MORPHOLINO, M. 220-2DEGREES; AND PIPERIDINO, M. 206-30DEGREES; THESE WERE PREPD. ALTERNATIVELY BY HEATING III WITH CHLORANIL IN XYLENE. THUS STRONG AMINES, WITH PKA ABOUT 11, GAVE 90-2PERCENT NORMAL SUBSTITUTION PRODUCT III; A WEAKER AMINE SUCH AS MORPHOLINE (PKA 8.7) GAVE BUT 57PERCENT III, WHILE METHYLPYPERAZINE GAVE BUT 47-9PERCENT III WITH 27PERCENT DEHALOGENATION PRODUCT.

FACILITY: VSES. NAUCH. ISSLED. KHIM. FARM. INST. IM. DROZHONIKIDZE, MOSCOW, USSR.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--SYNTHESIS OF HYDROGEN CYANIDE AND ACETYLENE IN A NITROGEN PLASMA
-U-
AUTHOR--KRASNOKUTSKIY, YU.I., GANZ, S.N., PARKHOMENKO, V.D.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(1) 33-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--HYDROGEN CYANIDE, ACETYLENE, NITROGEN, PLASMA TEMPERATURE,
HIGH TEMPERATURE EFFECT, METHANE, CALCULATION, CHEMICAL PRODUCT
PRODUCTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FEEL/FRAME--1985/1454 STEP NO--UR/0064/70/045/001/0033/0035
CIRC ACCESSION NO--AP0101540
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0101540

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE REACTION BETWEEN CH SUB4 AND N SUB2 IN A HIGH TEMP. N PLASMA, THE YIELD OF HCN INCREASED CONTINUOUSLY WITH INCREASING TEMP. AND WAS SIMILAR TO 13 TO 14PERCENT AT 3000DEGREEK AND AT N SUB2: CH SUB4 RATIOS OF (0.5 TO 3.0):1. THE YIELD OF C SUB2 H SUB2 FIRST INCREASED AND THEN DECREASED WITH INCREASING TEMP., WITH A MAX. AT SIMILAR TO 2000 DEGREEK; THE YIELD OF C SUB2 H SUB2 WAS AN IRREGULAR FUNCTION OF N SUB2: CH SUB4 RATIO, E.G., AT N SUB2: CH SUB4 RATIOS OF 0.5:1, 1:1, AND 3:1 THE MAX. YIELDS WERE 14, 4, AND 10PERCENT, RESP. CALCNS. SHOW THAT AT 4200DEGREEK THE YIELD OF HCN SHOULD REACH 25PERCENT.

UNCLASSIFIED

Electricity & Magnetism

USSR

UDC: None

ALEKSEYEVSKIY, N. Ye. and KRASNOPEROV, Ye. F., Institute of Physical Problems, USSR Academy of Sciences

"Magnetic Susceptibility of the Alloy $Nb_3Al_{0.75}Ge_{0.25}$ "

Moscow, Pis'ma v ZhETF vol 16, No 9, 1972, pp 522-525

Abstract: This letter represents a sequel to an earlier paper (N. Ye. Alekseyevskiy, et al, Doklad na X Mezhdunarodnoy konferentsii po fizike i tekhnike nizkikh temperatur v Varne -- Report to the Tenth International Conference on Low-Temperature Physics and Techniques, in Varna, 1971) which gave the results of measurements of the magnetic susceptibility of alloys of the system $Nb_3Al_{1-x}Ge_x$. The present paper describes measurements of one of the members of this system, $Nb_3Al_{0.75}Ge_{0.25}$, in the temperature interval of 300 to 19° K, in which magnetic weights with electromagnetic compensation were used. Curves are plotted for the susceptibility of the specimen as a function of the temperature and for the diamagnetic contribution added to the paramagnetic variation as the susceptibility varies with temperature. Interpretation of the curves is given.

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1/2 039 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--USE OF A SUPERCONDUCTING SOLENOID FOR NMR -U-

AUTHOR--(02)-ALEKSEYEVSKIY, N.YE., KRASNOPEROV, YE.P.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970. 190(6), 1325-8

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--NMR, SUPERCONDUCTOR, SOLENOID, MAGNETIC FIELD, ALLOY
DESIGNATION, WIRE, RUBY, SPECTRUM, NIOBIUM ALLOY, TITANIUM ALLOY,
ALUMINUM FOIL/(U)65BT NIOBIUM TITANIUM ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1997/1381

STEP NO--UR/0020770/190/006/1325/1328

CIRC ACCESSION NO--AT0120174

UNCLASSIFIED

2/2 039

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0120174

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE NMR OF PRIME27 AL FOILS OF DIFFERENT THICKNESSES WAS OBTAINED IN A SUPERCONDUCTING SOLENOID OF SMALL DIMENSIONS MADE WITH TYPE 65-BT WIRE. THE POSITION OF THE NMR LINES OF PRIME63 CU, AS A FUNCTION OF THE POSITION OF THE SPECIMEN IN THE MAGNETIC FIELD, SHOWED THAT THE UNIFORMITY OF THE FIELD WAS TO PRIME NEGATIVE 5-CM. THE SIGNALS OF PRIME27 AL WERE IN CLOSE AGREEMENT WITH AVAILABLE DATA (ALLEN AND SEYMOUR, 1963). THE KNIGHT SHIFT CAN BE OBTAINED WITH AN ACCURACY GREATER THAN PLUS OR MINUS 0.005 IN FIELDS SMALLER THAN OR EQUAL TO 30 KOE AT 13-200DEGREESK. THE SPECTRUM OF RUBY INDICATED THAT THE METHOD CAN BE USED IN NMR STUDIES OF METALS AND ALLOYS AS WELL AS OF CHEM. COMPOS. FACILITY: INST. FIZ. PROBL. IM. VAVILOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621/355.8.035.2

SHEKHTMAN, M. I., KRASNOPEROVA, N. N., and ROGINA, V. I.

"Permeability and Breakdown Pressure of Ceramic Electrodes and Some Separation Materials"

V sb. Issled. v obl. khim. istochnikov toka (Research in the Field of Chemical Sources of current -- collection of works) vyp 2, Saratov, Saratov. un-t, 1971, pp 120-128 (from RZh-Khimiya, No 18, Sep 72, Abstract No 18L178)

Translation: The authors consider data found in determining the aero- and hydrodynamic permeability as well as the breakdown pressure of electrodes and separation materials used in hermetic sealing of alkaline energizers. The aerodynamic permeability of electrodes is of the order of 10^{-5} cm²; in cobalt electrodes permeability is the same along and across the electrode, while for nickel-oxide electrodes the longitudinal permeability is approximately 3 times the transverse value. The hydrodynamic permeability of electrodes is of the order of 10^{-11} cm², the value being approximately 4 times lower than the aerodynamic permeability in cadmium electrodes. Increasing the degree of dispersion of the filler increases the breakdown pressure, reduces the maximum pore radius and increases the average pore radius. Data are also obtained for PEP, propylene fiber, capron, miplast, cellophane and other separation materials. V. S. Lavinson 1/1

- 10 -

1/2 025 UNCLASSIFIED PROCESSING DATE--02 OCT 70
TITLE--MAGNETIC PROPERTIES AND MICROSTRUCTURE OF COBALT, PLATINUM, IRON
ALLOYS -U-
AUTHOR--(03)-GORBUNOV, V.I., GRATSIANOV, YU.A., KRASNOPPEVTSEV, B.S.
COUNTRY OF INFO--USSR
SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (2), 13-16
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--ALLOY COMPOSITION, IRON, PLATINUM ALLOY, COBALT CONTAINING
ALLOY, IRON CONTAINING ALLOY, ALLOY HEAT TREATMENT, COOLING RATE,
MAGNETIC COERCIVE FORCE, SATURATION MAGNETIZATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1989/1931 STEP NO--UP/0129/70/000/002/0013/0015
CIRC ACCESSION NO--AP0108260

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--02 OCT 70

CIRC ACCESSION NO--AP0109260

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EFFECT OF THE FE CONCN. ON THE MAGNETIC PROPERTIES OF ALLOYS CONTG. PT 50, CO 20-50, AND FE 0-30 AT. PERCENT WAS STUDIED. THE ALLOYS WERE COOLED FROM 1300DEGREES IN A FURNACE OR IN AIR OR QUENCHED IN WATER OR OIL AND TEMPERED AT 700-800DEGREES FOR 3 HR. AN INCREASE OF THE FE CONCN. INCREASED THE CRIT. COOLING RATE (WHICH FOR 10, 20, AND 30 AT. PERCENT CORRESPONDED TO COOLING IN AIR, QUENCHING IN OIL, AND IN WATER, RESP.) AND DECREASED COERCIVE FORCE H_{SUBC} THAT FOR 30PERCENT FE WAS SMALLER THAN OR EQUAL TO 1350 OE. INCREASE OF THE DEGREE OF ORDER SIGNIFICANTLY DIMINISHES $SATN.$ BUT THE ALLOYING OF CO-PT ALLOY WITH FE INCREASES IT NOT ONLY IN THE AS QUENCHED BUT ALSO IN THE ANNEALED AND TEMPERED CONDITIONS. THE $SATN.$ OF ALLOYS CONTG. 10-20 AT. PERCENT FE DURING THE 1ST MIN OF THE ISOTHERMAL TEMPERING RAPIDLY DECREASES BUT THE DEGREE OF THIS DECREASE DIMINISHES WITH AN INCREASE OF FE CONCN. E.G. $SATN.$ OF THE AS QUENCHED (IN WATER) 10 AND 30PERCENT FE ALLOYS WAS 10,100 AND 7300 G AND AFTER 0.25 HR OF TEMPERING AT 800DEGREESC THEY WERE SIMILAR TO 5000 AND SIMILAR TO 7000 G, RESP. THIS EFFECT OF FE WEAKENS WITH A DECREASE OF TEMPERING TEMP. FROM 800 TO 700DEGREES. THE MAGNITUDE OF H_{SUBC} DEPENDS ON THE CONDITION OF ALLOY. THE MAX. H_{SUBC} (3800 OE) WAS OBSD. FOR THE 10PERCENT FE ALLOY TEMPERED AT 700DEGREES. GENERALLY TERNARY CO-PT-FE ALLOYS SHOW LOWER H_{SUBC} VALUES BUT GREATER $SATN.$ AND RESIDUAL INDUCTION IN ORDERED AS WELL AS IN DISORDERED STATE THAN BINARY CO-PT ALLOYS.

UNCLASSIFIED

GALKIN, V.V., KRASNOPEVTSEV, V.V., MILYUTIN, Yu.V.

"Introduction of Lithium Ions With an Energy of 10-80 Kiloelectron Volts Into Diamonds"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 837-846

Abstract: In this article the method of light interference was used to investigate imperfections of crystal lattice which occur in a diamond doped by introducing lithium ions with an energy from 20 to 80 kiloelectron volts with doses from 10^{14} to 10^{16} cm⁻². It is demonstrated that the doped region consists of two layers with different indexes of refraction. The first layer below the surface contains the basic mass of radiation defects; the thickness of the upper layer is determined by the free path of unchanneled ions, the thickness of which is several times greater than and obviously related to the free path of channeled ions. High temperature treatment leads to annealing of the defects in the case of small radiation doses and to conversion of the strongly damaged region of the diamond into graphite in the case of large radiation doses. Under certain conditions it is possible to observe the ionization region of the ion path. Preliminary data are also presented on the distribution of the electrically introduced active atoms of Li with respect to depth. It is pointed out that the measured profile of the total conductivity agrees with the interference measurements.

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USSR

GALKIN, V.V., et al., Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 837-846

The sequence of interference peaks with a small period is used to obtain interesting data about the second, deeper layer in the doped diamond. The difficulties involved in quantitative determination of the thickness of this layer and its index of refraction are discussed. It is concluded that the formation of a significant number of radiation defects constitutes a satisfactory explanation for the variation in index of refraction of diamond subjected to bombardment by lithium ions. The mechanism of this effect is discussed in some detail.

2/2

1/2 011 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--UTILIZATION OF RADIOACTIVE TRACERS IN THE STUDY OF GLOBAL
ATMOSPHERIC PROCESSES -U-
AUTHOR--KAROL, I.L., KRASNOPIETSEV, YU.V., MALAKHOV, S.G., PETROSYANTS,
M.A.
COUNTRY OF INFO--USSR
SOURCE--METEOROLOGIYA I GIDROLOGIYA, 1970, NR 4, PP 92-101
DATE PUBLISHED-----70
SUBJECT AREAS--ATMOSPHERIC SCIENCES
TOPIC TAGS--RADIOACTIVITY, RADIOACTIVE TRACER, AIR, ATMOSPHERIC
PRECIPITATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1987/1042 STEP NO--UR/0050/70/000/004/0092/0101
CIRC ACCESSION NO--AP0104440
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11SEP70

2/2 011

CIRC ACCESSION NO--AP0104440

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROGRAMME OF UTILIZING THE
OBSERVATIONS OF AIR RADIOACTIVITY AND RADIOACTIVE PRECIPITATION FOR THE
STUDY OF GENERAL ATMOSPHERE CIRCULATION DURING THE PERIOD OF GARP
IMPLEMENTATION IS STATED.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--PECULIARITIES OF FISSION PRODUCT CONCENTRATION DISTRIBUTIONS OVER
OCEANS IN THE TROPICAL ZONE AND THEIR CONNECTION WITH ATMOSPHERIC
AUTHOR--(03)-DMITRIEVA, G.V., KRASNOPEVTSEV, YU.V., MILAKHOV, S.G.

COUNTRY OF INFO--USSR, PACIFIC OCEAN

SOURCE--J. GEOPHYS. RES. 1970, 75(18), 3675-B5

DATE PUBLISHED-----70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, ATMOSPHERIC SCIENCES

TOPIC TAGS--FISSION PRODUCT, OCEAN RADIOACTIVITY, PARTICLE DISTRIBUTION,
ATMOSPHERIC CIRCULATION, TROPICAL ATMOSPHERE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/1001

STEP 1--US/000070/075/018/3675/3685

CIRC ACCESSION NO--AP0136428

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136428

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NEW DATA ON THE LATITUDE DISTRIBUTION OF RADIOACTIVE FISSION PRODUCTS OVER OCEANS IN REGIONS OF THE TROPICAL ZONE ARE GIVEN FOR THE PERIOD 1967-1968. THE DATA SHOW A CONSIDERABLE HETEROGENEITY OF RADIOACTIVE FISSION PRODUCTS IN AIR IN THE TROPICAL ZONE OVER THE INDIAN OCEAN AND IN THE WESTERN PACIFIC OCEAN. THIS HETEROGENEITY IS EXPLAINED BY INTRUSION INTO THE TROPICAL ZONE OF PARCELS OF MORE RADIOACTIVE AIR FROM SUBTROPICAL TEMPERATE LATITUDES OF THE WINTER HEMISPHERE BEHIND QUASI MERIDIONAL COLD FRONTS. THE RADIOACTIVE AIR ENTERED THE EQUATORIAL REGION AND, UNDER CERTAIN SYNOPTIC CONDITIONS, MOVED ACROSS THE EQUATOR INTO THE AIR CIRCULATION OF THE OPPOSITE HEMISPHERE. AIR TRANSFER FROM THE SOUTHERN TO THE NORTHERN HEMISPHERE IS PRESUMABLY ASSISTED BY TYPHOONS THAT HAVE BEEN TRANSFORMED INTO LARGE SCALE CYCLONES OVER THE PACIFIC OCEAN.

FACILITY: HYDROMETEOROL. SERV., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr: **AP00-47360**

Ref. Code: **VR0589**

PRIMARY SOURCE: Vestnik Khirurgii imeni I. I. Grekova, 1970,
Vol 104, Nr 1, pp 93-95

THE EFFECT OF MOIST NECROSIS IN BURN WOUND ON THE COURSE
OF BURN DISEASE

By N. I. Kochetygov, A. N. Orlov and O. S. Kravchenko

In burns with moist necrosis local inflammatory reaction, hyperemia during the period of shock, hyperazotemia are more pronounced, and earlier than in lesions with dry necrosis psychic disturbances and generalization of infection occur. Experimentally, burns with moist necrosis result in mortality more promptly. A grave course of burns with moist necrosis is stipulated, probably, by the formation of great amounts of tissue destruction products in the burn wound and their getting in blood.

11/ REEL/FRAME

19790886

1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SPECTROPHOTOMETRIC STUDY OF TUNGSTEN TELLURIUM HETEROPOLY ANIONS
-J-
AUTHOR--(02)-GAVELINA, YE.SH., KRASHOPOLSKAYA, M.B.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1055-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--TUNGSTEN, TELLURIUM, SPECTROPHOTOMETRIC ANALYSIS, ANION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--1999/1084 STEP NO--UR/0078/70/015/004/1055/1058
CIRC ACCESSION NO--AP0123077

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123077

ABSTRACT/EXTRACT--(U) GP-U- ABSTRACT. THE NA SUB2 TEO SUB3-NA SUB2 WO SUB4-H SUB2 SO SUB4 (HCL, HNO SUB3)-H SUB2 O SYSTEM WAS STUDIED BY THE METHOD OF ISOMOLAR SERIES AND BY CHANGING CONC. OF ONE OF THE COMPONENTS. THE W-TE HETEROPOLY ANIONS EXIST IN THE SYSTEM AT WITE RATIOS OF 2-18 AND THEIR FORMATION CAN BE DESCRIBED BY THE EQUATION: TEO SUB3 PRIME2 NEGATIVE PLUS TWO SUB4 PRIME2 NEGATIVE YIELD (TEH SUBN O SUBM) PRIME2 NEGATIVE. THE CONDENSATION OF HETEROPOLYANIONS IN THE SYSTEM STARTS AT A WITE RATIO OF 2:1 AND THE SUBSEQUENT INCREASE OF W CONC. DOES NOT CHANGE THE BASIC STRUCTURE OF THE ANION.

UNCLASSIFIED

USSR

UDC: 550.834

BALASHKAND, M. I., FILIPPOV, N. G., YEFIMENKO, M. D., CHEN, O. L., MAYOROV, V. V., KRASHNOL'SKIY, A. P., SOLODILOV, L. N., YEVDOKIMOV, G. S., Ramenskoye Department of the All-Union Scientific Research Institute of Geophysical Methods of Prospecting

"A Device for Emission of a Seismic Signal"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzyy, Tovarnyye Znaki, No 8, Mar 72, Author's Certificate No 330407, Division G, filed 20 Jan 70, published 24 Feb 72, p 142

Translation: This Author's Certificate introduces: 1. A device for emission of a seismic signal. The device contains compressed-air and liquid-fuel supply systems and a pneumatic chamber with movable piston which opens and closes the outlet port of the chamber. As a distinguishing feature of the patent, the compressed-air discharge energy is increased and the heat and force load on the chamber is reduced by fitting the movable piston with atomizers which break up the fuel in the compressed air during gas exhaust and by attaching a device for ignition of the fuel mixture to the chamber housing. 2. A modification of this device distinguished by the fact that

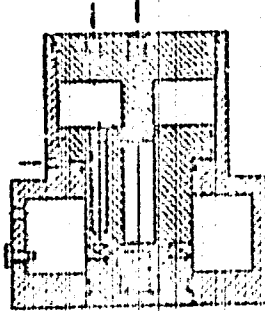
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SR

JALASHKAND, M. I. et al., USSR Author's Certificate No 330407

the movable piston has a channel filled with fuel and communicating with the atomizer through a check valve, and the cover of the chamber has a rod which enters the channel of the piston and feeds fuel into it through the check valve. 3. A modification of this device distinguished by the fact that the attachment for igniting the fuel mixture is made in the form of a wedge.



2/2

Acc. Nr:

AP0036817

K
Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i
Immunobiologii, 1970, Nr 1, pp 57-63

A STUDY OF POSTINFECTIOUS IMMUNITY ON A NATURAL
MODEL OF PARATYPHOID DISEASE OF RABBITS CAUSED
BY *S. TYPHIMURIUM*

N. S. Pryamukhina, L. N. Krasnoperova

A paratyphoid process pathogenetically similar to human typhoid fever was reproduced by oral infection of rabbits with *S. typhimurium*. The data obtained confirmed the materials of other authors and our previous data. Production of antibody-forming cells was traced. Immunological reconstruction of lymphoid tissue proved to be generalized, but the extent of participation of individual lymphoid organs in this process was unequal. The greatest correlation was observed between the content of antibody forming cells and the bacteriolysin level.

D. A.

b

USSR

UDC 669.187.2

VERSHININ, V. I., LEVIN, A. M., GLAZOV, A. N.,
KRASNORYADTSEV, N. N., and PASHCHENKO, V. Ye., Kuznetsk Metallurgical Combine and Siberian Metallurgical Institute

"Alloying Steel With Aluminum in Pouring From Ladle Into Ladle"

Moscow, Stal', No 6, Jun 73, pp 517-518

Abstract: Three smelting variants of manganese-aluminum steel were investigated in order to determine the most optimum variant. The investigation results are discussed by reference to curves of the magnesium content (in %) dependence on periods of smelting and pouring. Smelting manganese-aluminum steel without drawing off the slag, with double pouring over and alloying with aluminum in the second ladle, makes it possible to get in the ready-made metal in the average 0.0024% Mg; this decreases the melting duration by 15-20 min and reduces the waste due to stratification. By the standard technology with aluminum alloying in the ladle,

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USSR

VERSHININ, V. I., et al., Stal', No 6, Jun 73, pp 517-518

the steel contains 0.0076% Mg, by introducing aluminum into the furnace it contains 0.011% Mg. Other quality characteristics, as mechanical properties, purity of the surface, homogeneity of the metal relative to aluminum and other elements, are practically identical in smelting by all variants and satisfying the technological requirements. Two figures, seven bibliographic references.

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USSR

UDC: 669.187.2

KRASNORYADTSEV, N. N., LEVIN, A. M., GLAZOV, A. M., PASHCHENNO, V. Ye.,
KONOVALOV, K. N., VERSHININ, V. I.

"Decreasing the Loss of Titanium During Production of Stainless Steel"

Moscow, Metallurg, No 10, Oct 73, pp 18-19.

Abstract: Balance melts performed in a 40 ton arc furnace at the Kuznetsk Metallurgical Combine have shown that when type Kh18Ni9Ti stainless steel is produced by the ordinary technology (using up to 70% of waste of this type of steel in the charge, blowing of oxygen through the bath, running off of slag at the end of the melt and introduction of new lime and spar, alloying with 30% ferrotitanium in the furnace), the titanium losses are approximately as follows: 56% by interaction with oxides, 13% with oxygen and nitrogen in the metal, 27% with oxygen in the air, other losses 4.0%. Replacement of 30% ferrotitanium with 65% and alloying the metal in the ladle rather than in the furnace reduced the mean titanium loss from 57.0 to 52.0%. Several series of experimental melts were performed to find additional means of reducing and stabilizing titanium loss, without success. Success was finally achieved by modifying the technology quite basically. The primary features of the new technology are that the slag is not run

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USSR

Krasnoryadtsev, N. N., Levin, A. M., Glazov, A. N., Pashchenko, V. Ye.,
Konovalov, K. N., Vershinin, V. I., Moscow, Metallurgy, No 10, Oct 73, pp
18-19.

off from the furnace after melting of the ferrochromium, but rather poured
into the ladle with the metal at a high temperature (averaging about 1640° C),
reducing the length of the reduction period and increasing the degree of reduc-
tion of chromium from the slag. The metal is poured from the first ladle
into a second ladle through a tap hole 100-110 mm in diameter, and alloyed
with 65% ferrotitanium in the second ladle, preventing contact between
titanium and slag. Titanium loss was further reduced from 52 to 40.9% by
the new technology, and the stability of the titanium content was increased.

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USSR

UDC: 669.14.018.8-154.094.3

KRASNOYADTSEV, N.N., and LEVIN, A.M., Kuznetsk Metallurgical Plant;
Siberian Metallurgical Institute

"Titanium Waste When Molten Stainless Steel Jets Make Contact With Air"
Moscow, Izvestiya VUZ--Chernaya Metallurgiya, No. 8, 1971, pp 84-89

Abstract: The purpose of this paper is to set up a relationship indicating the effect of direct contact of air on a jet of molten stainless steel as it emerges from the oven, as a function of the length of the jet and the time interval of the contact. The presence of aluminum, titanium, or chromium in the steel sharply increases its tendency to interact chemically with the oxygen in the air, and the relationship to be found relates specifically to the amount of oxidized titanium formed. On the assumption that the metal jet emerging from the oven has the form of a truncated cone, the authors derive an expression for the titanium waste indicating that it is proportional to the length of the jet and the square root of the contact time. Since it is difficult to check this relationship under industrial conditions, the authors made the verification in the laboratory. The conditions of these experiments are described and their results are given in tabular form.

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USSR

UDC 528.522.42

KRASNOYLOV, I. I., Senior Lecturer, Moscow Institute of Engineers of Geology,
Aerial Surveying and Cartography

"The Azimuthal Stand"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Geodaziya i Aerofotos'yenka,
No 4, 1970, pp 43-52

Abstract: This article presents a detailed description of an azimuthal stand, its construction and installation, which is intended for investigating instruments errors in high accuracy measurements of horizontal angles in the case of sighting objects located at different elevations. Its basic elements are two long-focus collimators and a flat high precision mirror fastened on a horizontal axis. Basic inaccuracies of the stand are analyzed, and the determination of corrections is presented. It is stated in conclusion that the use of this stand is not limited to the solution of this problem. A group of optical theodolites can be investigated using this stand in order to establish the reliability of their use for measuring angles in the 1st and 2nd class triangulation in mountain region with large dip angles; to determine the "collimation error" asymmetry and its effect on the results of observations, and etc. Schematic drawings of various details of the stand are presented.

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USSR

UDC 517.92

FRASNOSEL'SKIY, M. A. and POKROVSKIY, A. V.

"Vibration-Resistant Differential Equations With a Continuous Right-Hand Side"

Moscow, Trudy Moskovskogo Matematicheskogo Obshchestva (Works of the Moscow Mathematical Society), Vol 27, 1972, pp 93-112

Abstract: There is isolated and studied the class of vibration-resistant differential equations $x(t) = Wu(t)$, where $x(t)$ is a vector function representing the state of an element, $u(t)$ is a scalar function representing control, W is an operator. Operator W is naturally determined for all continuous control functions. In an earlier article ("Vibration-Resistant Differential Equations," Doklady Akademii Nauk SSSR, Vol 191, No 3, 1970, pp 544-547), the authors announced a series of theorems dealing with vibration-resistant differential equations, both with continuous right-hand sides and with discontinuous ones. In the present article are presented complete proofs of the statements, from the above-cited article, pertaining to equations with continuous right-hand sides, and a number of new facts is established. 10 references.

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USSR

UDC: 534

KRASNOSELSKIY, M. A.

"Functional-Analytic Methods in the Theory of Nonlinear Oscillations"

Tr. 5-y Mezhdunar. konferentsii po nelineyn. kolebaniyem. T. 1 (Works of the Fifth International Conference on Nonlinear Oscillations. Vol. 1), Kiev, 1970, pp 322-331 (from RZh-Mekhanika, No 7, Jul. 71, Abstract No 7A148)

Translation: A survey of some results of papers of a group of Voronezh mathematicians obtained in the study of a number of problems associated with periodic and near periodic solutions of various nonlinear differential equations. A scheme is presented for studies of near periodic solutions of nonlocal problems on near periodic oscillations. New data are given from the theory of periodic solutions, in particular solutions of dissipative equations in problems of oscillations of systems with distributed parameters. A brief outline is given of the results of analysis of the simplest dynamic problems in which solutions branch. Some results are given from a study of oscillations of an elastoplastic element of a certain mass with friction, which required introduction of a new mathematical operation -- the hysteresis. K. (S. Kovalenko.

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1/2 021
TITLE--ELASTOMER OSCILLATORS -U- UNCLASSIFIED K PROCESSING DATE--18SEP70
AUTHOR--(03)-ZABREYKO, P.P., KRASNOSELSKIY, M.A., LIFSHITS, YE.A.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, DOKLADY AKADEMII NAUK SSSR, VOL 190, NO 2, 1970, PP
266-268
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--ELASTOMER, OSCILLATOR THEORY, ELASTIC MODULUS, LIPSCHITZ
CONDITION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REF/FRAME--1980/0903 STEP NO--08/0020/70/190/002/0266/0268
CIRC ACCESSION NO--AT0048748
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--18 SEP 70

CIRC ACCESSION NO--AT0048748

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EQUATION FOR THE OSCILLATIONS OF A POINT MASS ON A ONE DIMENSIONAL ELASTOMER IS STUDIED. IF $x(t)$ IS THE COORDINATE OF AN OSCILLATING POINT N OF MASS M AND THE FOLLOWING FORCES ACT ON THE POINT N AT TIME T: A VARIABLE EXTERNAL FORCE $F(t)$, FRICTION, THE STRESS OF THE ELASTIC ELEMENT GIVEN BY HOOK'S LAW, AND THE STRESS ϕ OF THE ELASTOMER, THE MOTION OF THE POINT N IS EXPRESSED BY AN EQUATION (SHOWN ON MICROFILM). THE STRESS OF THE ELASTOMER IS GIVEN BY A FORMULA (SHOWN ON MICROFILM) WHERE $f(\alpha, z)$ IS A FUNCTION DESCRIBING THE STRESS OF AN INFINITESIMAL ELEMENT OF THE ELASTOMER AND μ IS A MEASURE DESCRIBING THE DISTRIBUTION OF THE ELASTIC MODULUS WITH RESPECT TO THE PARAMETER α , THEOREMS ARE PROVED STATING THE CONDITIONS UNDER WHICH AN EQUATION (SHOWN ON MICROFILM) HAS A UNIQUE SOLUTION. THE THEOREMS HOLD WHEN ϕ IS DETERMINED BY THE FORMULA IF IT IS ASSUMED THAT THE NONLINEAR FUNCTION SATISFIES THE LIPSCHITZ CONDITION WITH RESPECT TO THE VARIABLE.

UNCLASSIFIED

USSR

ZABREYKO, P. P., et al, Doklady Akademii Nauk SSSR, Vol. 190, No. 2, 1970, pp 266-268

of the elastomer and μ is a measure describing the distribution of the elastic modulus with respect to the parameter α ; theorems are proved stating the conditions under which the equation

$$m \frac{d^2 x}{dt^2} + b \frac{dx}{dt} + Ex + \int_M F(x, L_-(\alpha), L_+(\alpha), L_0(\alpha)) d\mu(\alpha)$$

has a unique solution. The theorems hold when ϑ is determined by formula (1) if it is assumed that the nonlinear function $F(\alpha, L)$ satisfies the Lipschitz condition with respect to the variable L .

172 018 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--A DYNAMIC PROBLEM OF MECHANICS WITHOUT UNIQUENESS --U-
AUTHOR--(02)-KRASNOSELSKIY, M.A., MYSHKIS, A.D.
COUNTRY OF INFO--USSR
SOURCE--DIFFERENTIAL'NYE URAVNENIYA, VOL 6, APR. 1970, P. 634-643
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--DIFFERENTIAL EQUATION, ELASTICITY, DEGREE OF FREEDOM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1694 STEP NO--UR/0376/70/006/003/0634/0643
CIRC ACCESSION NO--AP0125315
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125315

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. DETAILED ANALYSIS OF A SIMPLE

PROBLEM RELATED TO THE DEVELOPMENT OF THE PROCESS OF STABILITY LOSS

WITHIN THE FRAMEWORK OF THE CLASSICAL THEORY OF ORDINARY DIFFERENTIAL

EQUATIONS. A TWO DIMENSIONAL MECHANICAL ELASTIC SYSTEM WITH A SINGLE

DEGREE OF FREEDOM IS CONSIDERED. THE BEHAVIOR OF THE TRAJECTORIES ON

THE PHASE PLANE WITHIN A FINITE PERIOD OF TIME IS INVESTIGATED, NOTING

THE OCCURRENCE OF BIFURCATION OF THE TRAJECTORIES. CONDITIONS UNDER

WHICH NO OTHER SOLUTION CAN BRANCH OFF FROM THE ZERO SOLUTION TO THE

PROBLEM ARE PRESENTED. FACILITY: VORONEZHSKI GOSUDARSTVENNYI

UNIVERSITET, KHARKOV, UKRAINIAN SSR.

UNCLASSIFIED

KRASNOSHCHEROV, V. V.

SO: JPAS 0053442
24 June 71

UDC 613.32:659.78.04.8

ARTIFICIAL MINERALIZATION OF WATER REGENERATED DURING SPACEFLIGHT
(Article by M. I. Shkiba, S. V. Chizhov, V. V. Krasnoshchikov, T. I. Alekseyeva, N. A. Galaktionov and Yu. P. Kozlov. *Meditsina, Fiziol. i Hig. 5, no. 2, 1971, pp. 28-31, submitted for publication 12 February 1970*)

Abstract: Data published in the Soviet and foreign literature indicate a need for adding minerals to the water regenerated from human wastes during spaceflight. The paper presents experimental findings concerning the mineralization of regenerated water with solid-phase salts, powdered CaCO₃ and salt tablets. This method has certain advantages over current techniques, yielding drinking water with better organoleptic properties and superior physical-chemical composition.

Since drinking water can be obtained during spaceflight by means of its regeneration from the products of man's vital functions and waste, hygienists are faced with the serious problem of ensuring that the regenerated water will have the required palatability and chemical composition.

It is known that in its composition regenerated water is close to distilled water and is characterized by the absence of mineral compounds present in natural drinking water which are physiologically important for the human body (Yu. Ye. El'yasi).

The biological role of most macro- and microelements present in water has been studied quite well (A. I. Vayner; R. D. Galovitch).

It is well known that food plays the principal role in supplying the body with mineral compounds. However, it has been established through research that the inadequate intake of individual mineral components with water can also exert a negative effect both on its organoleptic properties and on a number of body physiological functions (L. I. Shklatkin; Margaret). For example,

Life Support Systems

KRASNOSHCHIEKOV, V.V.

LIFE SUPPORT
SYSTEMS

COLEMAN

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(Inorganic Chemistry)

The restraining of water during prolonged space flight has great significance for reducing the weight of the life support systems [1, 10, 12].

Based on data furnished by a number of authors [1, 10, 12], human requirements for water during a flight of 3 days amount to about 7 liters (2.5) on a 1 month flight, a man needs 15 kg, while on a 1 year flight, he needs 25 kg [12]. Water stored on a spacecraft can consist of atmospheric condensates (H_2O), urine, sanitary-hygienic water, transpiration for the immediate use of biologic and lower plants, transpiration for the immediate use of flight, it is primarily feasible to recover water from the least polluted products of life type or the transpiration water plants.

The main source of AHC is the distillate from air cracked by naphtha; there can be identified products of its life activity. At the present time, there have been identified in AHC a large number of chemical compounds, both (hydrocarbons), we include acetone, nitrobenzene, nitrophenols, chlorobenzene and sulfides of calcium, potassium, sodium and cesium; phosphates organic impurities, we include the lower aliphatic alcohols, fatty acids, ketones, aldehydes and esters [7].

Acetone is formed in the human organism during the transformation of fatty acid and hydrocortisone. It is released mainly with expired air and in the urine. The release of acetone is also possible through the skin when the "acetone" level in the blood is high.

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[1 - USSR - D]

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--UTILIZATION OF THE COMPLEX FORMING PROPERTIES OF METALS FOR THE
PURIFICATION OF AN ATMOSPHERIC MOISTURE CONDENSATE FROM AMMONIUM IONS
AUTHOR--(05)--YEGOROVA, L.E., KRASNOSHCHENKO, V.V., PATRIKEYEVA, T.M.,
PEPELIAYEV, YU.V., STOLBOV, V.F.
COUNTRY OF INFO--USSR
SOURCE--KOSMICHESKAIA BIOLOGIYA I MEDITSINA, VOL. 4, JAN.--FEB. 1970, P.
56-60
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MAGNESIUM, ZINC, COPPER, COBALT, NICKEL, AMMONIUM COMPOUND,
ION EXCHANGE RESIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/1559 STEP NO--UR/0453/70/004/000/0056/0060
CIRC ACCESSION NO--AP0120338
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--30JCT70

CIRC ACCESSION NO--AP0120338

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. DESCRIPTION OF A PROCEDURE FOR THE ELIMINATION OF AMMONIUM IONS FROM ATMOSPHERIC MOISTURE CONDENSATES BY TREATMENT WITH MEIMG, ZN, CU, CO, NI EXCHANGE RESINS. THE VOLUME SORPTION CAPACITY OF THESE ION EXCHANGE RESINS IS STUDIED AS A FUNCTION OF THE AMMONIUM CONCENTRATION AND PH. EXPERIMENTS INDICATE THAT AMMONIA, AMINES AND AMINO ACIDS CAN BE EFFECTIVELY REMOVED FROM AQUEOUS SOLUTIONS BY THIS METHOD.

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UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--USE OF THE COMPLEX FORMING PROPERTIES OF METALS FOR FREEING
ATMOSPHERIC CONDENSATE FROM AMMONIUM IONS -U-
AUTHOR--YEGOROVA, L.E., KRASNOSHCHENOV, V.V., PATRIKEYEVA, T.M.,
PEPELYAYEV, YU.V., STOLBOV, V.F.
COUNTRY OF INFO--USSR

SOURCE--MOSCOW, KOSMICHESKAYA BIOLOGIYA I MEDITSINA, RUSSIAN, VOL 4, NO 1,
JANUARY-FEBRUARY 1970, SUBMITTED FOR PUBLICATION 25 SEPTEMBER 1969, PP
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--AMMONIA, ADSORPTION, CATION EXCHANGE RESIN, METAL COMPLEX
COMPOUND, ATMOSPHERIC WATER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1987/1291

STEP NO--UR/0453/69/004/001/0056/0040

CIRC ACCESSION NO--AP0104629

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104629

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF THE SORPTION OF AMMONIUM, WHICH IS ONE OF THE MAIN COMPONENTS OF ATMOSPHERIC CONDENSATE, FROM WATER SOLUTIONS BY MEANS OF CATION EXCHANGE RESINS IN THE ME FORM. THE RELATIONSHIP BETWEEN THE VOLUME CAPACITY OF CATIONITES IN ME FORM, THE AMMONIUM CONCENTRATION IN THE SOLUTION AND THE HYDROGEN ION CONCENTRATION WAS EXAMINED. IT WAS FOUND THAT THE USE OF CATIONITES IN ME FORM (PARTICULARLY IN THE CU FORM) INCREASED THEIR AMMONIUM CAPACITY.

UNCLASSIFIED

USSR

UDC 632.952:635.64

KRASNOSHCHKOVA, T. V. (deceased), and PANCHULIDZE, L. T., Georgian Branch
of the All Union Scientific Research Institute of Pharmacology

"Effectiveness of Some Fungicides in Controlling Tomato Phytophthora"

Moscow, Khimiya v Sel'skom Khozyaistve, No 4, 1973, pp 43-44

Abstract: A study carried out in southern region of Kolkhidskaya Plain showed that the fungicides polycarbacin, editon, euparen and antracol used at a 0.4% concentration were as effective against tomato phytophthora as cyneb. The material was sprayed at a rate of 1000 l/hectare. A triple spraying of the plants with these fungicides during the season increased appreciably the marketable yield of the tomatoes.

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USSR

UDC 536.242:532.517.4.001.5

KRASNOSHCHIEKOV, YE. A., PROTOPOPOV, V. S., IGAMBERDYEV, A. T., GRIGOR'YEV, I. S.

"Experimental Study of Local Heat Transfer Coefficients in the Turbulent Flow of Carbon Dioxide of Supercritical Parameters in a Rectangular Channel Heated on One Side"

[Nauchn. tr.] Tashkent. politekhn. in-t ([Scientific Works of] Tashkent Polytechnical Institute), 1970, No 65, pp 115-126 (from RZh-Teploenergetika, No 12, Dec 70, Abstract No 12689)

Translation: An experimental section with a through cross section of 16×3.9 mm and a heated length of 256 mm, and also a heated device in the form of a semi-cylinder of diameter 120 and length 256 mm were made from a single copper block. The thickness of the side walls was the same and equal to 1.9 mm and the thickness of the roof of the channel was 4 mm. Before entering into the channel there was an unheated segment for hydrodynamic stabilization. The section was connected into a closed circulation circuit. The experimental results were compared with

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KRASNOSHCHIEKOV, YE. A., et al, [Nauchn. tr.] Tashkent, politakhim. in-t, 1970, No 65, pp 115-126

heat transfer coefficients calculated from a relationship that holds for turbulent flow of a fluid of supercritical parameters in a circular tube:

$$Nu_f = \frac{0.8 Re_f Pr_f}{12.7 + \frac{0.8}{Pr_f^{1/4}} (Pr_f^{1/4} - 1) + 1.07} \left(\frac{c_p}{c_{p,f}} \right)^n \left(\frac{\rho_c}{\rho_f} \right)^{1.1}$$

$$E = (1.82 \lg Re_f - 1.64)^{-1}$$

$$n = 1 / (T_c / T_f - T_f / T_w)$$

Until the development of more exact methods of determining local heat transfer coefficients, it is recommended that they be calculated from the above formula with the introduction of the equivalent diameter of the channel as the characteristic dimension. + ill., 1 table, 6 references. Yu. D. Barulin.

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Biochemistry

USSR

UDC 547.964.4+577.17



SHVACHKIN, YU. P., VDOVINA, R. G., POZNYAK, M. G., VOLUNSKAYA, YE. N.,
 HYABTSEV, M. N., KHRIVTSOV, V. F., GRACHEVA, A. K., ~~KRASNOCHERNYKH, S. P.~~
 NOVOSELOV, V. A., GRUZDEV, V. S., OLEYNIK, A. M., KALINKIN, Z. B., FEDOTOV,
 V. P., IVANOV, A. I., YUDAYEV, N. A.

"New Synthesis of Human Insulin"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (64), No 1, 1973, pp 216-217

Abstract: Human insulin was synthesized on the basis of obtaining A and B chains by the solid phase method [R. B. Merrifield, J. Am. Chem. Soc., No 85, 2149, 1963; J. Stuart, et al., Tverdofazny sintez peptidov, Moscow, Mir, 1971] and subsequently combining the synthetic chains into the complete molecule of the biologically active hormone. Here, a new version of the synthesis is realized which permits exclusion of treatment of the chains with sodium in liquid ammonia which eliminates the danger of undesirable side reactions caused by this reagent [A. Marglin, et al., J. Am. Chem. Soc., No 88, 5051, 1966]. The A and B chains of human insulin were synthesized on an automated device using a spherical chloromethylated copolymer of styrene with 1% divinyl benzene as the insoluble carrier. All operations were performed in a nitrogen atmosphere. The derivatives of the L-amino acids used in the synthesis of the A and B chains are listed. The fluorohydrates of the chains were con-

USSR

SHVACHKIN, YU. P., et al., Zhurnal Obshchey Khimii, Vol XXIII (2V), No 1, 1973, pp 216-217

verted into S-sulfonates which exhibited no differences from the S-sulfonates of the corresponding natural chains of bull insulin. The synthetic A and B chains were recombined both with the corresponding natural chains and among each other. The resultant compounds had specific insulin activity of comparable magnitude to the previously synthesized insulin compounds [K. Lubke, et al., Adv. Enzymol., No 33, 445, 1970].

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- 4 -

USSR

UDN 629 78:536.27

KRASNOSHTANOV, A. B., REVYAKIN, A. V.

"Practical Methods for Organizing Heat Exchange Under a Change in the Aggregate State Under Conditions of Weightlessness"

Tr. Mosk. vyssh. tekhn. uch-shcha im. N. E. Baumana (Works of Moscow Higher Technical School imeni N. E. Bauman), 1972, No. 149, pp 36-38 (from RZh-41. Raketostroyeniye, No 11, Nov 72, Abstract No 11.41.129)

Translation: The advance of technology leads to the necessity of developing and studying heat exchange equipment achieving the transition of a coolant from the liquid to the gas phase and the reverse under conditions of gravitation different from terrestrial. Technical, experimental and practical aspects of the development of evaporators and condensers intended for operation under conditions of weightlessness are considered. 2 ill., 29 ref.
T. A. Ye.

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1/4 066 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SPACE ESPIONAGE IN THE PLANS OF THE PENTAGON -U-
AUTHOR--KRASNOV, A. **K**
COUNTRY OF INFO--USSR, UNITED STATES
SOURCE--MOSCOW, AVIATSIYA I KOSHONAVTIKA, NO 3, 1970, PP 44-45
DATE PUBLISHED-----7C

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, SPACE TECHNOLOGY,
NAVIGATION
TOPIC TAGS--ESPIONAGE, ARTIFICIAL EARTH SATELLITE, DATA TRANSMISSION,
STATIONARY SATELLITE, UNDERWATER DETECTION, SUBMARINE DETECTION, MISSILE
SUBMARINE, IR EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0569

STEP NO--UR/0209/70/000/003/0044/0045

CIRC ACCESSION NO--AP0132745

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132745

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. COMPUTATIONS MADE BY AMERICAN SPECIALISTS SHOW THAT UP TO 100 SATELLITES MUST BE PUT INTO ORBIT FOR CREATING A GLOBAL ESPIONAGE SYSTEM. THIS WOULD MAKE IT POSSIBLE TO SCAN THE ENTIRE EARTH EACH 30 MINUTES AND ENSURE A PROBABILITY OF DETECTING OBJECTS OF 0.75. IN THE UNITED STATES ONE OF THE PRINCIPAL GOALS IS THE UNDERWATER DETECTION OF SUBMARINES. THE JOURNAL AIR FORCE REPORTS THAT THE POSITION OF SUBMARINES CAN BE DETERMINED BY DETECTING INSIGNIFICANT TEMPERATURE CHANGES AT THE WATER SURFACE. IT IS WELL KNOWN THAT ATOMIC SUBMARINES USE A GREAT QUANTITY OF SEA WATER FOR COOLING THEIR REACTORS AND OTHER SYSTEMS. THE HEATED WATER, RELEASED BY THE SHIP, AND THE BUBBLES FROM THE WORKING SCREENS CREATE A DISTURBED REGION OF WATER WHICH RISES TO THE SURFACE BEHIND THE SUBMARINE. IT IS PROPOSED THAT THIS PHENOMENON BE USED FOR DETECTING MISSILE BEARING SUBMARINES FROM SATELLITES BY MEANS OF HIGHLY SENSITIVE IR APPARATUS. FOREIGN SCIENTISTS STATE THAT SUCH APPARATUS CAN REGISTER A SEA WATER TEMPERATURE DIFFERENCE OF 0.1 DEGREESE. IR SYSTEMS DEVELOPED IN THE UNITED STATES ARE ALSO SUITED FOR IDENTIFICATION OF INDUSTRIAL AND MILITARY FEATURES, INCLUDING AIRPORTS AND MISSILE SITES, RELATIVELY WEAK SOURCES OF THERMAL RADIATION. IN ADDITION TO THE DEVELOPMENT OF EARLY WARNING SATELLITES WITH IR APPARATUS FOR THE DETECTION OF MISSILES DURING LAUNCHING AND IN THE ACTIVE SEGMENTS OF TRAJECTORIES, INVESTIGATIONS ARE BEING MADE FOR CREATING SATELLITES FOR DETECTING MISSILES IN THE MIDDLE (PASSIVE) SEGMENT AND THE DEVELOPMENT OF EQUIPMENT FOR TRANSMITTING INFORMATION DIRECTLY TO THE SAFEGUARD SYSTEM.

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PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132745

ABSTRACT/EXTRACT--THE JOURNAL AIR FORCE REPORTS THAT AT ALL TIMES WASHINGTON HAS INFORMATION ON 35PERCENT OF ALL SURFACE VESSELS IN THE PACIFIC OCEAN AND BY MEANS OF SATELLITES DURING 1970-1975 IT WILL HAVE INFORMATION ON THE POSITION OF ALMOST ALL SURFACE VESSELS AND SUBMARINES. HOWEVER, THE AMERICAN PRESS REPORTS THAT THE INFORMATION WHICH IS NOW RECEIVED BY THE "SPIES IN THE SKY" CANNOT BE TRANSMITTED, PROCESSED AND USED. THIS APPLIED, IN PARTICULAR, TO THE PHOTOS DROPPED FROM THE SAMOS SATELLITES IN CAPSULES CAUGHT BY SHIPS OR AIRCRAFT. INFORMATION SENT BY RADIO IS USED ALMOST AT ONCE, BUT THE PHOTOGRAPHS CAN BE RECEIVED ONLY AFTER SEVERAL DAYS (ACCORDING TO ELECTRONIC NEWS). MOREOVER, MODERN DATA COLLECTION SYSTEMS CANNOT ENSURE RAPID TRANSMISSION OF GREAT VOLUMES OF INFORMATION. FOR EXAMPLE, THE TRANSMISSION OF DATA CONTAINING 16,000 PHOTO FRAMES REQUIRES FROM 18 TO 180 DAYS. THE LAPSE OF SUCH A LONG TIME IS FULLY ADEQUATE FOR THE RECONNOITERED COUNTRY TO RELOCATE IMPORTANT INSTALLATIONS. ACCORDINGLY, THE PENTAGON FEELS THAT IT IS NECESSARY TO USE LASERS AND OTHER MEANS FOR ACCELERATING THE TRANSMISSION OF DATA BY MORE THAN A HUNDREDFOLD. IT IS PROPOSED THAT SUCH SYSTEMS BE TESTED IN THE NEAR FUTURE ABOARD ORBITAL SPACE LABORATORIES. ON THE BASIS OF RECENT APOLLO FLIGHT AMERICAN SPECIALISTS HAVE CONCLUDED THAT ONLY ASTRONAUTS ARE CAPABLE OF MAKING AN ACTIVE SEARCH FOR AND RAPID IDENTIFICATION OF MILITARY OBJECTS. BY THE MID 1970'S IT IS DEEMED FEASIBLE TO HAVE STATIONARY SATELLITES IN ORBIT AT 36,000 KM WHERE THEIR MOTION IS SYNCHRONIZED WITH THE EARTH'S ROTATION. THIS WILL INCREASE THE EFFICIENCY OF SPACE ESPIONAGE.

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4/4 068

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132745

ABSTRACT/EXTRACT--A SYSTEM OF THREE STATIONARY SATELLITES WILL ENSURE
CONSTANT OBSERVATION OF THE EARTH'S ENTIRE SURFACE AND A CONSIDERABLE
OVERLAPPING OF THE ZONES SCANNED BY EACH SATELLITE.

UNCLASSIFIED

Vacuum Tubes

USSR

UDC 621.385.168.3.052.002

KRASNOV, A.P., MANUKHINA, G.G.

"Effect Of Technological Processes On Cathode Emission And Output Power Of Titanium-Ceramic Microwave Tubes"

Elektron. tekhnika. Nauch.-tekhn. sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1972, Issue 4, pp 62-67 (from RZh:Elektronika i yeye primeneniye, No 9, Sept 1972, Abstract No 9A106)

Translation: It is shown that the emission and dynamic parameters of titanium-ceramic tubes of the microwave band depend on the temperature of the regimes of evacuation and soldering of the tubes and also on the pressure of the gases at the time of sintering of the nickel powder for the cathode base. Summary.

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USSR

UDC: 669.18:66.011.56

TREYSIER, Yu. Ya., IZMAYLOV, G. A., KLESHKO, O. B., KRASNOK, B. I.,
PIROZHENIKOV, V. Ye., All-Union Scientific Research Institute of Automation of
Ferrous Metallurgy

"New Developments in the Automation of Steel Smelting Production"

Moscow, Metallurg, No 6, 1973, pp 21-24

Abstract: This article deals with new processes for the automation of steel production in accordance with the statement of the Central Committee of the Communist Party that implementation of the complex automation of technological processes is one of the decisive factors in the successful fulfillment of technical-economic aims. The All-Union Scientific Research Institute of Automation of Ferrous Metallurgy (VNIIAchermet) has done much to automate converters, various installations for continuous pouring of steel, arc steel smelting ovens, and electroslag remelting. A dynamic system for controlling the converter process has been put into use in the Chelyabinsk Metallurgical Plant; the block diagram of the operating algorithm for this system is reproduced and explained. The demand for continuous pouring of steel is being satisfied by an automatic system of continuous pouring using an all-purpose computer for controlling the converter shop of the "Azovstal'" metallurgical
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USSR

THEYSTER, Yu. Ya., et al., Metallurg, No 6, 1973, pp 21-24

plant. This system was developed by V. I. Schermet in cooperation with the Ul'yanovsk State Pedagogical Institute "Metallurgavtomatika." The structural diagram for the system is also given. Other achievements in the field of automatic control of metallurgical production are cited and described.

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- 52 -

KRASNOV, B. P.

CHEMISTRY

3455 61777 47 700 74
UTILIZATION OF OZONE IN TREATING INDUSTRIAL SEWAGE

Article by B. P. Krasnov, N. I. Zhukovskiy, and V. A. Zhukovskiy. The title of the article is: "Utilization of ozone in treating industrial sewage." The title of the article is: "Utilization of ozone in treating industrial sewage." The title of the article is: "Utilization of ozone in treating industrial sewage."

The ozonation method is lately being used more and more often in sewage treatment. The reason for this is that ozone, which is converted in most low-boiling organic compounds to less toxic ones, readily oxidizes, however, prevents the scale application of this method.

In this connection, the possibility of intensifying the process and simplifying the ozonation method is being played a decisive role in its more complete utilization of the ozone in the ozonation process and simplifying the ozonation method in industry.

Since oxidation of contaminants by ozone occurs mainly in a diffusion field at the discontinuity of the phase, work on intensifying the process has been directed toward finding ways to improve the contact between the ozone-air mixture and the solution being treated [1].

Another means of making possible a sharp acceleration in the oxidation of contaminants by ozone is the use of catalytic agents in the ozonation process. It is known that various salts (e.g., and silver nitrate [2]), for example, which serve as catalysts in this process. It should be noted that the choice of catalyst is of an empirical nature. This is caused by the fact that oxidation of organic compounds by ozone in weak solutions has been insufficiently studied.

Our study was made on the oxidation by ozone of a certain class of organic compounds in weak solutions. Aliphatic alcohols were used as the test compounds, since they are quite often present in the sewage of enterprises of the chemical industry, and in addition, can be formed as intermediate products during the oxidation of certain organic compounds by ozone [3].

The experiments were carried out in glass columns, 40 and 60 cm in diameter, and 400 mm high. The ozone-air mixture, released from nitric oxides (for this purpose the mixture was passed through an absorbent with a weak alkaline solution), entered the column through a No 2 Siebel filter

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1/2 013 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--PROCEDURE FOR FREEZING ANIMAL TISSUES AT MINUS 155DEGREES FOR
PURPOSES OF QUANTITATIVE AND QUALITATIVE HISTOCHEMICAL INVESTIGATIONS
AUTHOR--(02)--KRASNOV, I.B., ILINAKAKUYEVA, YE.I.
COUNTRY OF INFO--USSR *K.*
SOURCE--TSITOLOGIYA 1970, 12(2), 262-4
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HISTOCHEMISTRY, FREEZING, FREON, HYDROCARBON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/2033 STEP NO--UR/9053/70/012/002/0252/0264
CIRC ACCESSION NO--AP0120676
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23OCT7

CIRC ACCESSION NO--AP0120676

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SIMPLE METHOD WAS DESCRIBED USING ISOPENTANE OR FREON-12 (CCL SUB2 F SUB2) FOR THE QUICK FREEZING OF TISSUE SPECIMENTS FOR HISTOCHEM. PURPOSES. THE ADVANTAGE OF THIS METHOD IS THE PREVENTION OF THE APPEARANCE OF ICE CRYSTALS AND THE RESULTANT CELL DESTRUCTION. THE METHOD DESCRIBED GAVE BETTER RESULTS THAN DID DR ICE.

UNCLASSIFIED

1/2 039 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--USE OF PHOTOELASTIC COATINGS TO STUDY THE EARLY STAGES OF THE
FATIGUE FAILURE OF METALS -U-
AUTHOR-(03)-ALEKSANDROV, A.YA., KRASNOV, L.A., KUSHNEROV, V.A.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR, 1970, 191(2), 319-22

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--FATIGUE STRENGTH, PHOTOELASTICITY, CAST IRON, METAL CRACKING,
MICROCRACK, METAL STRESS, OPTIC SENSOR, METAL CREEP, METAL DEFORMATION,
MATERIAL FAILURE/FAILURE OPTICALLY SENSITIVE MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0564

STEP NO--UR/0020/70/191/002/0312/0322

CIRC ACCESSION NO--AT0126311

UNCLASSIFIED

2/2 039

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0120311

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIN COATINGS (40-50 MU) OF OPTICALLY SENSITIVE MATERIAL ED-6M ON CAST IRON AND STEEL SPECIMENTS WERE STUDIED. BY DEFORMING THE COATED METALS, THE ACCUMULATION OF DEFORMATION AS WELL AS FORMATION AND DEVELOPMENT OF MICROCRACKS AT STRESSES BOTH LARGER AND SMALLER THAN THE CREEP LIMIT WERE OBSD. THE STRENGTH OF THE COATING WAS CONSIDERABLY IMPROVED BY GLUING IT TO THE SPECIMENT BY MEANS OF AN EPOXY GLUE AND THEN PRESSING. THE GLUED ON COATING ALLOWED DEFORMATIONS OF 4-6PERCENT WITHOUT ANY NOTICEABLE CHANGE IN THE COATING. FACILITY: NOVOSIBIRSK, INST. INZH. ZHELEZNODOROZH. TRANSP., NOVOSIBIRSK, USSR.

UNCLASSIFIED

USSR

UDC 678.06-419.8:677.521/.01:53

KIRILLOV, V. N., YEFIMOV, V. A., KOZIN, V. I., ABLEKOVA, Z. P.,
KRASNOV, L. L., TIKHOMIROVA, R. S.

"Effect of Fillers on the Thermophysical Properties of Fiberglass
Plastics"

Moscow, Plasticheskiye Massy, No 11, Nov 70, pp 38-40

Abstract: The authors investigate the effect which chemical composition and heat treatment of the filler have on the thermophysical properties of fiberglass plastics at 50-300°C. The plastics studied were based on phenol-furfural or organosilicon binders, and fillers comprised of silica or aluminoborosilicate fabric with a paraffin lubricant. It was found that the behavior of the thermophysical characteristics of fiberglass plastics as the temperature changes depends on the processes which take place in the filler. In materials based on aluminoborosilicate fiber, oxidation of the lubricant determines the change in thermophysical properties with temperature, while the determining factor in plastics based on silica fabric is evaporation of the moisture absorbed by the fibers. Heat treatment of silica fabric is an effective measure for reducing shrinkage of plastics based on this filler.

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USSR

UDC 620.179.16

KRASHOV, L. N.

"The Problem of Optimization of Characteristics of Reflected Pulse Flow Detectors"

Priborostroyeniye. Resp. Mezhd. Nauch.-Tekhn. Sb. / Priborostroyeniye. Republic Interdepartmental Scientific Technical Collection /, No 11, 1971, pp 49-52 (from Razrobnitsy Zhurnal, Elektronika i Izmeritel'naya Tekhnika, No 32. Single Issue No 1, 1972, Abstract No 1.32.277, Resume)

Translation : A theoretical investigation is presented of the problem of increasing of the noise stability of reflected pulse flow detectors under conditions of the influence of fluctuation interferences commensurable by the level of the intelligence signal. It is demonstrated that an essential narrowing of the bandwidth of the device is possible by applying linear coding and decoding of the probing signal. In this case, the magnitude of the mean-square error of the device becomes smaller than by optimum utilization of the signal. Three illustr., eight biblio. refs.

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USSR

UDC: 621.317.75

AKULOV, Yu. V., ZIBOROV, S. R., KLIMOV, V. P., KRAZNOV, I. M., MARIGOLOV, V. K.

"A Two-Frequency Sweep Generator for Measuring Amplitude-Frequency and Phase-Frequency Characteristics in a Frequency Band"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. i inzhiniringu. T. 2 (Re-
ports of the All-Union Scientific and Technical Conference on Radio Engineer-
ing Measurements. Vol. 2), Novosibirsk, 1970, pp 123-125 (from RZh-Radiotekh-
nika, No 12, Dec 70, Abstract No 12A390)

Translation: The article describes one of the basic modules of an instru-
ment for measuring amplitude-frequency and phase-frequency characteristics.
A two-frequency sweep generator with a sweep band from 5 to 50 MHz is de-
signed on the principle of frequency conversion. The complete block dia-
gram of the two-frequency sweep generator is given with enumeration of all
modules. The sweep generator is based on two quartz-crystal resonators
on a frequency of 57 MHz excited on the fifth mechanical harmonic and used
in two corresponding quartz-crystal oscillators. In addition to the fre-
quencies generated by these two oscillators, their beat frequency (difference
frequency) is also used. The two-frequency sweep generator was used as

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USSR

AKULOV, Yu. V. et al., Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2, pp 123-125

the oscillator module in the above-mentioned instrument for measuring amplitude-frequency and phase-frequency characteristics by the frequency transfer method, giving a phase measurement precision to 3° . One illustration. E. L.

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USSR

UDC: 621.317.75

AKULOV, Yu. V., ZIBOROV, S. R., KLIMOV, V. P., KRASHOV, L. M., MARIGODOV, V. K.

"Some Problems in Measuring the Amplitude-Frequency and Phase-Frequency Characteristics of Quadripoles"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 2), Novosibirsk, 1970, pp 67-70 (from Elektr. Radiotekhnika, No 12, Dec 70, Abstract No 12A393)

Translation: The authors point out fundamental difficulties and formulate requirements which must be imposed when designing wide-band two-frequency sweep generators and mixers which are the principal component parts of instruments for measuring the amplitude-frequency and phase-frequency characteristics of quadripoles. A block diagram is given together with a description of the operation of an instrument designed by the authors for measuring the phase-frequency and amplitude-frequency characteristics in the 5-50 MHz range. The instrument has a phase measurement limit of $\pm 10^\circ$ and a trans-

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USSR

AKULOV, YU. V., et al, Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2, 1970, pp 67-70

mission ratio limit of 10 DB. A serially produced F2-1 instrument is used as the low-frequency phase meter in the indicator section. The error in phase measurement is no greater than 2° over the entire working frequency range. E. L.

2/2

1/2 014 UNCLASSIFIED PROCESSING DATE--090CT70
TITLE--COULOMB STRIPPING IN A WIDE ENERGY RANGE OF EMITTED PROTONS --0--
AUTHOR--(05)--LITVIN, V.F., NEMILOV, YU.A., KRASNOV, L.V., GRIDNEV, K.A.,
ZHEREBTSOVA, K.I.
COUNTRY OF INFO--USSR
SOURCE--YAD. FIZ. 1970, 11(2), 273-6
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--EXCITED NUCLEUS, NICKEL ISOTOPE, DEUTERON BOMBARDMENT,
EXCITATION ENERGY, ELECTRON TRANSITION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1980/0380 STEP NO--UR/0367/70/011/002/0273/0276
CIRC ACCESSION NO--AP0048652
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--090CY70

CIRC ACCESSION NO--AP0048652

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPECTROSCOPIC FACTORS WERE OBTAINED FOR TRANSITIONS TO LEVELS OF THE PRIME63 NI NUCLEUS BY USING EXCITATION ENERGIES IS SMALLER THAN 5 MEV. THE SPECTROSCOPIC FACTORS FOR TRANSITIONS OBTAINED BY USING EXCITATION ENERGIES UP TO 3 MEV COINCIDE WITH THE VALUES OBTAINED FROM EXPTS. AT "OVER BARRIER" D ENERGIES (15 MEV). AT HIGHER EXCITATION ENERGIES (L EQUALS 2, E SUBD EQUALS 4.096 MEV), ANOMALOUSLY LARGE SPECTROSCOPIC FACTORS ARE OBTAINED.

FACILITY: LENINGRAD. GOS. UNIV., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 615.849.19.015:612.845.1-086.3

KRASNOV, M. M., SAPRYKIN, P. I., DORONIN, P. P., NIKOL'SKAYA, G. M.,
AKOPYAN, V. S., and MAMEDOV, N. G.

"Electron-Microscopic Study of Tissues of the Eye Fundus Following Laser
Coagulation"

Moscow, Vestnik Oftal'mologii, No 2, 1973, pp 9-12

Abstract: The changes produced in the tissue of the eye fundus following exposure to therapeutic doses of laser radiation were studied in experiments on pigmented rabbits of the chinchilla breed with the purpose of obtaining data pertaining to the optimum conditions of applying laser radiation for photo-coagulation of the retina in the therapy of retinal detachment. Radiation in the energy range of 0.02-0.05 J $\pm$ 8% (energy densities of 5.5-17.0 J/sq. cm.) emitted by a ruby laser was applied. The irradiated eye tissues were subjected to microscopic and electron-microscopic study on sacrificing the animals within periods of 10 min-3 wks after photocoagulation. The damage was apparently limited to the external layers of the retina and the pigmented epithelium and deeper layers were affected only slightly. Two types of damage to the retina and to the pigmented epithelium were observed, one due to mechanical effects of an explosive nature and another due to thermal coagulation effects. Within 2-3 wks the part of the photoreceptor apparatus at the site of the injury

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USSR

KRASNOV, M. M., et al., Vestnik Oftal'mologii, No 2, 1973, pp 9-12

produced by the radiation was substantially restored to a state in which it apparently was capable of functioning. The sclera was not affected. The study that had been conducted indicated that in the search for optimum conditions of laser irradiation one must attempt to reduce as far as possible mechanical effects and restrict the thermal effects to the layer of pigmented epithelium.

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1/2 027

TITLE--FIRST EXPERIENCE WITH SURGICAL CORRECTION OF MYOPIA AND APHAKIA
(OPERATIONS OF KERATOMILESIS AND KERATOPHAKIA) -U-
AUTHOR--KRASNOV, M.M.

UNCLASSIFIED

PROCESSING DATE--02OCT70

COUNTRY OF INFO--USSR

SOURCE--OFTAL'MOLOGII, 1970, NR 2, PP 2--28

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--EYE DISEASE, CORNEA, SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1986/0826

STEP NO--UR/0357/70/000/002/0024/0028

CIRC ACCESSION NO--AP0102788

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--0200170

CIRC ACCESSION NO--AP0102788

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TEN OPERATIONS OF REFRACTIONAL KERATOPLASTY WERE PERFORMED. THE SURGICAL TECHNIQUE USED IS MUCH SIMPLER THAN THAT IN THE BARRAKER METHOD. IN PARTICULAR, THIS CONCERNS THE METHOD OF CALIBRATED MODELLING OF THE TRANSPLANT WITH PARALLEL SECTIONS. INTRACORNEAL LENSES FOR KERATOPHAKIA WERE FORMED OF FETAL AND NEONATAL CORNEA, SINCE THESE TISSUES DISPLAY LESS MARKED ANTIGENIC PROPERTIES. THE OPERATION SHOULD BE EFFECTED UNDER CONTROL OF AN OPERATING MICROSCOPE. IN ALL CASES EXCEPT ONE (IN KERATOCONUS) THE OUTCOMES OF THE OPERATION TURNED OUT TO BE QUITE SATISFACTORY.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--YIELD OF CARBON 11 FROM PRIME9 BE (PRIME3 HE, N) PRIME11 C AND
PRIME9 BE (ALPHA, 2N) PRIME11 C REACTIONS -U-
AUTHOR--(05)-KRASNOV, N.N., DMITRIYEV, P.P., DMITRIYEVA, Z.P.,
KONSTANTINOV, I.O., MOLIN, G.A.
COUNTRY OF INFO--USSR
SOURCE--AT. ENERG. 1970, 28(3), 258
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--CARBON ISOTOPE, ION BOMBARDMENT, ALPHA BOMBARDMENT, BERYLLIUM
ISOTOPE, ION ENERGY, ALPHA SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1994/1236 STEP NO--UR/0089/70/028/003/0258/0258
CIRC ACCESSION NO--APC115253
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--18OCT70

CIRC ACCESSION NO--AP0115253

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE YIELD OF PRIME11 C IN THE PRIME9 BE (PRIME3 HE, N) PRIME11 C REACTION INCREASES ALMOST LINEARLY (0.05-1.60) TIMES 10 PRIME9 DECAYS-(SEC MUA HR) WHEN THE PRIME3 HE IONS ENERGY IS INCREASED 2-30 MEV; THE YIELD OF PRIME11 C IN THE PRIME9 BE(ALPHA, 2N)PRIME11 C REACTION INCREASES FROM 0 TO (0.125-0.75) TIMES 10 PRIME9 DECAYS-(SEC MUA HR) WHEN THE ALPHA PARTICLES ENERGY IS INCREASED FROM 20 TO 27-44 MEV, RESP. THE ABOVE YIELDS WERE MEASURED BY BOMBARDING THE BE IN A CYCLOTRON.

UNCLASSIFIED

1/2 031 UNCLASSIFIED PROCESSING DATE--23OCT7
TITLE--YIELDS OF FLUORINE 18 DURING THE IRRADIATION OF SODIUM, MAGNESIUM,
AND ALUMINUM BY HELIUM 3 IONS AND THE IRRADIATION OF SODIUM BY ALPHA
AUTHOR--(05)-KRASNOV, N.N., DMITRIYEV, P.P., DMITRIYEVA, Z.P.,
KONSTANTINOV, I.O., MOLIN, G.A.
COUNTRY OF INFO--USSR
SOURCE--AT. ENERG. 1970, 28(3), 257
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--FLUORINE ISOTOPE, SODIUM, MAGNESIUM, ALUMINUM, IRRADIATION,
ALPHA PARTICLE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/1578 STEP NO--OR/0089/70/023/003/0257/0257
CIRC ACCESSION NO--AP0120357
UNCLASSIFIED

2/2 031 UNCLASSIFIED PROCESSING DATE--23OCT7
CIRC ACCESSION NO--AP0120357
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE YIELDS OF PRIME18 F
(DISINTEGRATIONS-SEC-MU A-HR) FROM PRIME23 NA (PRIME3 HE, 2 ALPHA)
PRIME18 F AND PRIME23 NA (ALPHA, 2 ALPHA N) PRIME18 F WERE SIMILAR TO 1
TIMES 10 PRIME6 AT SIMILAR TO 27.5 MEV AND SIMILAR TO 55 TIMES 10 PRIME
AT SIMILAR TO 44 MEV, RESP. FOR PRIME24 MG (PRIME3 HE, 2 ALPHA N)
PRIME18 NE YIELDS PRIME18 F, THE YIELD WAS SIMILAR TO 5 TIMES 10 PRIME
AT SIMILAR TO 28 MEV AND FOR PRIME27 AL (PRIME3 HE, 3 ALPHA) PRIME18 F
IT WAS SIMILAR TO 2.5 TIMES 10 PRIME6 AT 29.5 MEV.

UNCLASSIFIED

KRASNOV, O. G.

JPRS 56003

16 May 1972

UDC 621.791.011:669.14.018.44

DEVELOPMENT OF CRACKS DURING WELDING OF EP199 ALLOY

(Article by Candidate of Technical Sciences V. P. Moiseyenko, Engineer L. I. Mikhaylovskiy, Engineer G. G. Krasnov, Engineer O. G. Krasnov; Moscow, Sverdlovskoye Proizvodstvo, Russian, No 8, 1970, pp 25-29)

Thermally hardened nickel-based EP199 alloy, alloyed with chromium, titanium and molybdenum, is used extensively for welded assemblies intended for operation in aggressive media at temperatures up to 930°C. According to operating conditions cracks are not permitted to form in weld seams. Welding experience indicates, however, that the most frequent defects are microcracks in the heat-affected zone, appearing at the points of closing of round and annular seams, and also at the intersection of round seams with longitudinal seams. Their initiation by auxiliary welding increases weld deformations and the amount of labor involved in manufacturing the products.

One of the causes of microcracks in the heat-affected zones of such seams, as is known [1], is the low plasticity of zones of the metal enriched with austenite and their inadequate resistance to the formation of cracks as the seam shrinks.

The total amount of austenite produced and the character of its distribution depend on the degree of overheating of the metal during welding and the time it spends at the dangerous temperature, i.e., on the thermal cycle of welding.

Welds made were formed for the purpose of selecting the optimum method of welding assemblies of EP199 alloy. The round form made it possible to simulate the unfavorable conditions of heating of full-scale seams. The results and conditions of argon-arc welding with a nonfusing electrode are presented in Table 1. Metallographic analysis of templates cut from various parts of the seam (Figure 1) revealed the amount of austenite formed, its distribution in the various parts of the heat-affected zone and its influence on the formation of cracks.

The presence of a critical component of linear character was noted at a distance of 0.01-0.02 mm from the line of fusion in all specimens.

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[1 - USSR - 1]

KRASNOV, V.

(Capt 1st Rank)

M:1

ARTISUBMARINE DEFENSE REVIEWED

Article by Vice Adm. A. Sorokin, Hero of the Soviet Union, and Capt. 1st Rank V. Krasnov, Hero of the Soviet Union, in the journal "Voenno-Morskoy Flot", No. 1, January 1972, signed to the press as "Anonymous", pp. 45-51.

In Issue No. 1 of 1972 we published an article by Vice Adm. A. Sorokin, Hero of the Soviet Union, entitled "Kosmic Submarine". The article dealt with modern atomic submarines, their very high combat characteristics, and views regarding the combat employment of submarine forces.

The authors of the article below acquaint the reader with the uses of submarines, the antisubmarine defense forces (which might be used to oppose atomic submarines and a threat from the depths. [Based on the Soviet and foreign press.]

A Little History

World War I was in progress.

Three English armored cruisers, the "Hogue," "Aboukir" and "Cressy," were on patrol duty in the southern part of the North Sea on 22 September 1914. With their strong artillery and armor protection they could successfully join battle with any large enemy ship. But the horizon was clear. It seemed that nothing threatened the future of the English squadron.

And suddenly a deafening explosion erupted at the side of the "Aboukir." The ship settled on its stern, rolled over, and sank. People who were left alive could be seen swimming in the water.

JPRS: 55386
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The cruiser "Hague" rushed to the scene of the catastrophe to help. The commander of the cruiser gave the order to stop engines and lower lifeboats. At this time the participants at a meeting were notified from the ship, only now did the commander understand what an irreparable error he had committed by stopping the engines. But it was too late. Two more explosions were heard. The stern of the "Hague" rose upward, the ship broke in two, and then followed the "Hague" to the bottom. The "Hague" was the same fate.

Facilities among the English women and officers numbered 111. The of 107 tons and a crew of 28 men. News of the loss of the English ship and the sensational success of the German U-boats spread around the world. It became clear that a new type of combat ship had appeared at sea and it would have to be reckoned with.

During World War I submarines sank 6000 merchant vessels and 100 coastal ships with a total displacement of more than 15 million tons.

But the submarines paid for this success. The number of submarines sank grew with every passing year of the war in a geometric progression. While during the first two years the average number of U-boats sunk was one, in 1917 it was two, in 1918 it was three, and in 1919 it was four. This is due to the rapid development of antisubmarine (AS) forces.

The allies threw hundreds of destroyers and thousands of auxiliary vessels, airplanes, and dirigibles against the German submarines and they showed up traps for ships. Tens of thousands of antisubmarine aircraft were sent out in the naval theaters of military action. Hydroacoustic devices were invented to detect submarines and depth bombs to destroy them.

Merchant vessels bristled with guns. 11,000 guns of small and medium caliber were installed on English steamships. 65,000 sailors were transferred from the navy to the merchant fleet.

A new type of ship, a submarine hunter or destroyer, armed with artillery and depth charges appeared in the fleet. Merchant vessels traveling in convoy started to protect merchant vessels at sea.

The PLG measures taken made it possible for the allies during World War I to send 185 German submarines to the bottom. Naval Battles of World War I

World War II continued the deadly fight between the submarine and the antisubmarine defense.

USSR-

UDC 681.327.8:621.395

KRASNOV, V.A.

"Method Of Synchronization Of Samples"

USSR Author's Certificate No 308528, filed 30 Apr 70, published 23 Aug 71 (from RZ: Elektrosvyaz', No 2, Feb 1972, abstract No 2.64.317p)

Translation: A method of synchronization of samples is proposed with multiplication of the signal being received into weight functions, shifted with reference to one another in time, with integration of the product obtained and comparison of the results of integration among themselves. With the object of decreasing the number of operations of multiplication, integration, and comparisons, multiply the signal being received with two weight functions, shifted one with reference to the other at a time equal to half the duration of the weight functions, and integrate the products obtained. Then compare each result of integration with a constant magnitude equal to half of the maximum possible value of the result of integration which is obtained at coincidence of the weight function of the signal being received. Following this, repeatedly compare the results of integration among themselves. If the result of one integ-

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USSR

KRASNOV, V. A., USSR Author's Certificate No 308528, filed
30 Apr 70, published 23 Aug 71

ration proves to be more than half of their maximum possible magnitude in comparison with the other results of integration, supply directly the result of integration. In the case where it proves to be less than half of its maximum possible value in comparison with the other results of integration, supply the difference between the result of integration and its maximum possible value and then shift the weight functions to the side of the maximum value of the result of the second comparison.

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USSR

UDC [621.362:538.4]-225.98.001.24

VOROB'YEV, V. S., KRASNOV, V. I.

"Optimization of the Channel Parameters of a Closed Cycle Magnetohydrodynamic Generator"

Teplofiz. vysokikh temperatur (Thermophysics of High Temperatures), 1971, Vol 9, No 1, pp 165-169 (from RZh-Elektr tekhnika i energetika, No 7, Jul 71, Abstract No 7A89)

Translation: The local internal efficiency of a magnetohydrodynamic generator channel (η_0) was optimized with respect to the proportion of the addition (Δ), the Mach number (M), the electron temperature at the given level of conductivity, the magnetic field induction, the braking parameters of the flux and its composition. The problem of the conditional extremum is reduced to solving a system of two algebraic equations which for a given type of addition depend on two parameters which are a combination of the initial variables. Graphs are presented which permit selection of the optimal Δ , M , T_e insuring the maximum η_0 under a broad range of conditions for different additions and inert gases. There are 4 illustrations, 2 tables and a 3-entry bibliography. [High Temperature Institute of the USSR Academy of Sciences].

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AA 0040725

Krasnov, V.I.

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 70

242645 PNEUMATIC FORGING HAMMER. This patent is for an improved type of forging hammer which has a modified cylinder 1 with piston rod and hammer 2 and a tank 8 which has a capacity equal to the cylinder capacity over the piston. At the beginning of the work cycle the piston 2 is in the extreme upper position, valve 5 open, valves 3, 4 & 6 closed and distributor valve 7 in the neutral position. The valve 7 moves to the upper position and valve 3 opens allowing air to activate the power stroke of the piston 2. Valve 3 opens and allows exhaust air to move through to valve 7. At the moment of hammer impact the valves 3 & 6 close and 4 opens allowing air to return to tank 8. When the air pressure in 1 & 8 is equal, valve 4 closes and valve 5 opens and valve 7 moves into the neutral position. After a momentary pause valve 6 opens allowing air to flow from 8 to the under part of cylinder 1 lifting the piston 2 to the start position.

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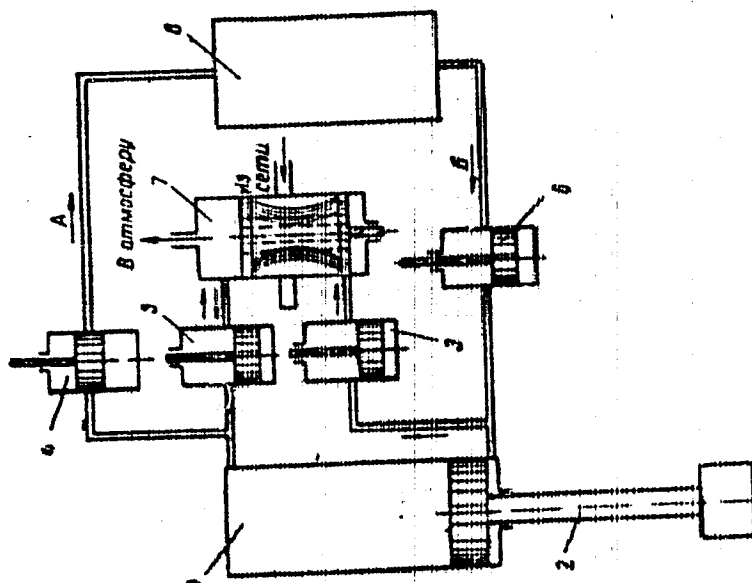
AA0040725

26.4.63 as 834389/25-27. V.R. KRASNOV & P.E. ROSLYAK-
OV. (18.9.69) Bul 15/25.4.69. Class 49g. Int.Cl. 3 23]

AUTHORS: Krasnov, V. I.; and Roslyakov, P. I.

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19750374

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